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**REMEDIAL PLANNING ACTIVITIES
AT SELECTED UNCONTROLLED
HAZARDOUS SUBSTANCE DISPOSAL SITES
WITHIN EPA REGIONS I-IV**



EPA CONTRACT 68-01-7250

EBASCO SERVICES INCORPORATED

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**DRAFT EVALUATION REPORT
REVIEW OF THE RPs
FEASIBILITY STUDY WORK PLAN
(SECOND DRAFT)**

**OSBORNE SITE
GROVE CITY, PENNSYLVANIA**

AUGUST 3, 1987

W.A. NO. 25-3438

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August 3, 1987
RM/3/87-0207
Response Required

Ms. Patricia Tan
CERCLA Enforcement Section
Environmental Protection Agency
Region III
841 Chestnut Street
Philadelphia, PA 19107

Subject: REM III PROGRAM - EPA CONTRACT NO. 68-01-7250
WORK ASSIGNMENT NO. 25-3438
OSBORNE SITE - GROVE CITY, PA
EVALUATION OF THE RPs SECOND DRAFT
FEASIBILITY STUDY WORK PLAN

Dear Ms. Tan:

The REM III Team is pleased to present this draft report, which documents the review and evaluation on the second draft of the responsible parties' (RPs') Feasibility Study Work Plan. This evaluation report is a combination of technical reviews conducted by staff experienced in hydrogeology, chemistry, environmental science, and environmental/civil engineering. The review and evaluation of this Work Plan focused on whether the RPs have adequately addressed REM III/EPA comments that were generated on the RPs' first draft. The attached report is submitted for your review and comments, if any, to enable us to prepare the Final Evaluation Report.

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Please feel free to call me or our Site Manager, Mr. Raymond P Wattras, at 412-788-1080 to discuss our evaluation of the CFS report.

Very truly yours,

Richard C Evans, P.E.
Regional Manager, Region III

RCE/SEJM/bb

cc: E Shoener - EPA Region III (w/o attachment)
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AUGUST 3, 1987

DRAFT EVALUATION REPORT
REVIEW OF THE FEASIBILITY STUDY WORK PLAN
(SECOND DRAFT, DATED JUNE 18, 1987)

OSBORNE SITE
GROVE CITY, PENNSYLVANIA

EPA WORK ASSIGNMENT NUMBER 25-3438
UNDER
CONTRACT NUMBER 68-01-7250

PREPARED BY:
NUS CORPORATION
PITTSBURGH, PENNSYLVANIA

APPROVED BY:
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LANGHORNE, PENNSYLVANIA

PREPARED BY:



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1.0 INTRODUCTION

The REM III Team, under the United States Environmental Protection Agency (EPA) REM III Contract No. 68-01-7250 has reviewed and evaluated the RP's Second Draft Feasibility Study (FS) Work Plan for the Osborne Site, Grove City, Pennsylvania dated June 18, 1987. This review and draft evaluation report was conducted in accordance with Task 3 of the approved REM III Final Work Plan dated August 5, 1986.

The subject work plan was reviewed and evaluated to determine whether the scope of work and technical approach covered and fully satisfied the requirements for conducting a F.S, as set forth by the National Oil and Hazardous Substances Pollution Contingency Plan (NCP) (40 CFR 300.68) November 20, 1985, Superfund Amendments and Reauthorization Act (SARA) of October 1986, and whether the RP have satisfactorily responded to EPA/REM III comments.

Section 2.0 of this report provides a brief description and history of the Osborne Site. Technical comments pertaining to the second draft work plan are provided in Section 3.0. Conclusions and recommendations, based on the REM III Team's review of the work plan, are given in Section 4.0 of this report.

2.0 BACKGROUND

2.1 SITE DESCRIPTION

The Osborne Landfill Site is located in Pine Township, Mercer County, Pennsylvania, approximately one-half mile east of Grove City. The site area encompasses approximately 15 of 80 acres of an abandoned coal strip mine. This tract of land is currently owned by Mr. Edward McDougal. From the 1950s until 1963, the site was operated as a dump by Mr. Samuel Mooney. This operation continued under the ownership of Mr. James Osborne from 1963 until 1978, when the landfill was closed by the Pennsylvania Department of Environmental Resources (PADER) (Hart, 1984). A fence with a locking gate surrounds the site perimeter to restrict site access.

The site is bordered to the north by a wooded area, to the south by Pine Street Extension, to the east by a cornfield, and to the west by mine spoils, which are overgrown with small trees and vegetation. A wetland area of approximately 15 acres in size is located south of the mine spoil pile, and borders the southwest portion of the site. A small intermittent stream emerges from this wetland area and flows under the Pine Street Extension in a southeast direction.

In the early 1900's, a 1,500-foot long pit was excavated in a southeast to northwest direction beginning near Pine Street (Hart, 1984). The strip mine highwall is located near the eastern border of the site. A cornfield is adjacent to the top of this highwall. The mine spoils are located along the western portion of the site. Three small ponds are situated at the base of the highwall. The largest pond (Pond No. 3) is located at the northeast corner of the site and encompasses roughly 1 acre. It was reported to be roughly 30-35 feet deep (Hart, 1984). A small intermittent stream enters this pond from the north. The second pond (Pond No. 2) is located south of the large pond and is estimated to be one-half acre in size. The smallest pond (Pond No. 1) is situated about 100 feet south of the second pond. The ponds receive surface water runoff but there is no surface water discharge from them. Rather, the pond's water levels were reported to fluctuate with the water table (i.e., the ponds recharge the groundwater).

Nineteen test borings and monitoring wells were constructed to determine the geologic conditions at the site. These wells monitor the water table aquifer, the Clarion Formation, the Homewood Formation, the Upper Connoquenessing Formation, and the Burgoon Formation. No monitoring wells are constructed outside the site boundary. Domestic wells are constructed in the upper portion of the Clarion Formation. The Grove City municipal well is constructed in the Homewood Formation.

2.2 SITE STATUS

Cooper Industries is the primary generator of wastes at the site and signed a consent order with PADER in October, 1983 to conduct an RI/FS and to clean up the site. Approximately 600 drums and 45 cubic yards of contaminated surface soils were removed in the summer of 1983 by Cooper Industries (USEPA, 1984). A remedial investigation was conducted by Fred C. Hart Associates, Inc., a consultant to Cooper Industries. The RI report was submitted to PADER in June 1984.

The remedial investigation focused on the extent and nature of groundwater and surface water contamination at the site. Analysis of the shallow wells indicated the presence of lead (60 µg/l) and nickel (31 µg/l), which exceed EPA Drinking Water Standards (Hart, 1984). Wells monitoring the leachate exhibited contamination by benzene (109 µg/l), nickel (87 µg/l), chromium (60 µg/l), lead (260 µg/l), mercury (4.2 µg/l), and arsenic (33 µg/l).

Pentachlorophenol was detected in the Clarion Formation and the Burgoon Formation. Well in the Burgoon Formation also indicated the presence of bis(2-ethylhexyl)phthalate. The following priority pollutants including, bis(2-ethylhexyl)phthalate (24 µg/l), ethylbenzene (19 µg/l), toluene (12 µg/l), chromium (13 µg/l), cadmium (10 µg/l), and nickel (13.4 µg/l) were detected in the Homewood Formation.

Surface water samples were collected from the two intermittent streams, the swamp area, and Ponds 2 and 3. High concentration of iron (260 to 6020 µg/l) were detected in both ponds and the intermittent stream which emerges from the wetland area (19,500 µg/l). Samples taken from the swamp area revealed zinc (66-4809 µg/l) lead (96 µg/l), copper (5-68 µg/l), and nickel (11-15 µg/l). The swamp area also exhibited phenol (12 µg/l) and di-n-butyl phthalate (3.57 µg/l). Priority pollutant organics including chloroethane (7.1 µg/l), 1,1-dichloroethane (6.3 µg/l), 1,1,1-trichloroethane (1.4 µg/l), and trichloroethylene (0.6 µg/l) were present in the onsite ponds (Hart, 1984).

Organic analysis of waste samples obtained from drums detected the presence of ethylbenzene, ortho-xylene, ethylmethylbenzene, and assorted hydrocarbons. These pollutants were reported as a percentage of the total waste content as follows:

- ethylbenzene (less than 0.1 - less than 100 percent)
- ortho-xylene (0.2 - 0.5 percent)
- ethylmethylbenzene (0.5 - 1.0 percent)
- assorted hydrocarbons (0.5 - 3.0 percent)

In December 1986, the REM III Team reviewed and evaluated the RPs draft FS Work Plan. The general conclusion regarding this review was that the draft FS Work Plan failed to properly scope the FS process as outlined in the NCP and SARA. Additionally,

the draft FS Work Plan was deficient with respect to identifying general response actions, cleanup criteria, and specific remedial action objectives.

The REM III Team also reviewed and evaluated the RPs RI Report (dated June 1984) and submitted a Final Evaluation Report to EPA on April 17, 1987.

The Osborne Landfill Site RI Report contained major data gaps with respect to defining the extent of groundwater contamination and the direction of groundwater flow. In addition, the risks to the public health and environment were not adequately assessed. In order for the responsible party to conduct a feasibility study (FS) that would comply with SARA and allow EPA to select an appropriate remedial alternative, it was recommended that the data gaps should be resolved and a quantitative risk assessment performed.

Following the submittal of the Final Evaluation Report in April 1987, the RPs met with EPA and the REM III Site Manager to discuss the status of the Osborne Site. The RPs agreed to prepare a second draft FS Work Plan which will outline the scope of work for performing an FS, based on EPA/REM III recommendations, and the scope of work for resolving the data limitations that were identified by EPA and the REM III Team. The Second Draft FS Work Plan to which this Evaluation Report addresses was submitted to EPA in June 1987.

3.0 TECHNICAL REVIEW COMMENTS AND DRAFT EVALUATION ON THE SECOND DRAFT FEASIBILITY STUDY WORK PLAN

The REM III Team's review focused on evaluating the Work Plan objectives for conducting an FS in accordance with the requirements of the NCP, SARA and other relevant EPA guidance documents for implementing an FS under CERCLA. The subject second draft FS Work Plan is divided into five sections. Section 1.0 is an introduction and states the purpose of the Work Plan. Section 2.0 deals with the historical perspective of the site. Section 3.0 gives a summary of existing data. The proposed RI/FS scope of work is outlined in Section 4.0 while Section 5.0 details the Project Organization and Schedule. Eight appendices (A through H) are attached to the Work Plan of which the last, namely Appendix H, is the RPs response to PADER/EPA/and REM III comments on the first draft of the RPs FS Work Plan.

Provided below are general comments and recommendations pertaining to the overall second draft FS work plan (Section 3.1). This is followed by more specific comments that pertain to each section of the subject work plan (Section 3.2). A conclusion summarizing this evaluation and proposed recommendations for inclusion into the Final Work Plan is given in Section 4.0 of this evaluation report.

3.1 GENERAL COMMENTS

The second draft FS Work Plan has adequately identified the significant data limitations which are needed to assess public health and environmental risks and to evaluate remedial alternatives. Further, the REM III Team finds that the data collection objectives and the FS objectives are basically sound. However, the sampling program does not provide sufficient information to evaluate whether the project objectives will be met. Particularly, the proposed "sampling plan data summary" in Table 4-2 of the Work Plan should have a corresponding text which provides the rationale for each sampling activity (i.e., additional source data, additional pathway data, additional receptor data and additional engineering alternatives data).

Each sampling activity should be fully discussed in the Work Plan with respect to the following:

- The basis for selecting a particular data type (i.e. HSL, RCRA metals, etc.)
- Rationale as basis for a particular analytical method.
- Rationale for number of samples.
- Identification of sample locations (with corresponding figures).

It appears that the RPs have made a good-faith approach to develop a Work Plan which will satisfy the Agency's and PADER's comments, with respect to complying with the SARA. The REM III Team (and EPA) anticipated that the Second Draft Work Plan would provide more information with respect to the sampling program. This deficiency should be resolved by incorporating a discussion of the sampling program in a Final Work Plan.

3.2 SECTION - SPECIFIC COMMENTS

The following is a list of review comments referenced to the corresponding page numbers:

<u>Item No.</u>	<u>Page No.</u>
1.	The "Scale" on Figure 3-1 should read either 1"=24,000" or 1"=2,000 ft. The latter is normally used in USGS maps. (See Page 9)
2.	The REM III Team disagrees with the conclusions drawn in Section 3.2.1. (Nature and Extent of Contamination). These conclusions are understated and conflict with the information provided in Table 3-2 and in Tables 3-5 through 3-12. Also, there is a lack of site-specific data to make those conclusions. The REM III Team's comments in the Evaluation Report on the RP's RI support this comment. (See Page 26)
3.	The REM III Team disagrees with the term "lack of receptors." The wetland area adjacent to the site would be a "receptor." Also, potential receptors (i.e. new developments and/or homes) should have been considered. (See Page 29)
4.	The availability of exposure mechanisms given in Table 3-3 can be disputed. The fencing is not continuous, thus it does not prevent unauthorized entrance, nor does it prevent fugitive dusts from escaping. The identification of downgradient receptors did not include potential land use (i.e. home developments). (See Page 30)
5.	It is incorrect to assess the validity of the 1984 RI risk conclusions by comparing existing groundwater and surface water data with ARARS. Various tables are presented which compare leachate, groundwater, and surface water data with a corresponding ARAR (i.e., MCL, AWQC, etc.). Although the ARARS were exceeded for both surface water and groundwater, the RPs have concluded that the risks posed by the site are low. This was primarily based on the latest round of data collection (1984), for which only one inorganic compound exceeded the ARAR. The

problems with this comparison, or assessment, are as follows:

- For many of the site contaminants, such as methylene chloride, there are no ARARs. This does not mean that you do not have a risk.
- Many of the contaminants were reported to be below method detection limits (BMDL). However, it is possible that the actual concentration, which would be below the detection limit, exceeds a specific ARAR. An example is TCE, which on page 35 was reported as BMDL. The PMCL for TCE is 5.0 µg/l. If the detection limit was 10 µg/l, then it is not known if you have exceeded the ARAR (See Page 33).
- In order to assess the validity of the 1984 risk conclusions, a quantitative risk assessment should be conducted in accordance with EPA guidance. (Superfund Public Health Assessment Manual. Office of Emergency Response, October 1986. EPA 540/1-86/060 OSWER Directive 9285.4-1.)

6. Table 3-13 does a nice job of identifying the relevant issues and the general data needs, but needs to expand and explain how and where the data will be collected. In some instances (Page 53), the "data needs" are too general. For example, the work plan states that "additional information will be developed to assess performances....." The data needs indicate that "various physical and chemical data for selected technologies". This is too general and a reviewer cannot evaluate if the data developed will be sufficient. Additionally, a work plan should identify the rationale for the number and location of samples, and how the data will be used in the FS or Risk Assessment (See Page 52).
7. The major objectives for this study are basically sound. The work plan needs to describe in more detail how each objective will be met (See Page 56 and Section 4.4 of the FS Work Plan).
8. Table 4-2 provides information with respect to meeting the "data needs" identified on Table 3-13. The work plan should provide the supporting rationale and description of the sampling plan summary. For example, why and where are the 50 subsurface soil samples going to be taken from? Where will the test pits be

located? The text needs to support this table by providing information on the following:

- Numbers and location (with Figures) of samples.
- Rationale for specific sampling locations.
- Field GC (i.e. what parameters will be analyzed for?)
- Data Types (specifically for "additional pathway data").
- Level V Nonstandard Methods needs to be defined (pg. 68).

The most significant problem with this work plan is that it does not provide rationale or the scope of work for the sampling program. (See Page 61).

9. "Alternate water supply" and "individual treatment units" should be included under "groundwater controls" in Table 4-3, as a potential GRA (See Page 77).
10. The potential remedial alternatives (PRA) should not be so vague. For example, what does "limited site cleanup" mean? Also, the PRAs identified do not correspond to the five cleanup categories as stated in the work plan. For example: the work plan indicates that site capping and revegetation with continued groundwater monitoring corresponds with "alternatives which attain applicable and relevant Federal public health or environmental standards"; however, for this to be correct, the groundwater would have to be remediated to a level which meets a specific ARAR (i.e., MCL) (See Page 79).
11. A 4-week review period is required to review the Detailed Sampling Plan, QA/QC Plan, and Health and Safety Plan. (See Page 90).
12. The outlines for the SOP, QA/QC, and HSP plans and the PHA and FS outlines have been reviewed and are satisfactory. However, it was anticipated that these project plans would accompany the Second Draft FS Work Plan.

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4.0 CONCLUSIONS/RECOMMENDATIONS

As mentioned earlier in the comments, the most significant deficiency of the RP's work plan is that it does not provide sufficient information with respect to the proposed sampling program. This shortcoming may be significant if the work plan is to be included as part of a Consent Order. The important aspects of any work plan are to identify realistic objectives and data needs, and provide a scope of work necessary to fulfill the project objects. The subject work plan has adequately established project objectives and data needs, but failed to provide enough information to evaluate the scope of work, particularly for fulfilling the data needs of this study.

It is recommended that the details of the sampling program be developed with input from the EPA. This could be accomplished by meeting with the RP and their contractor to scope or "brainstorm" the details of the sampling program. Once the EPA and the RP agree to the details, or rationale, of the sampling program, then the Final Work Plan can be prepared and the FS can be initiated.